DOCUMENT RESUME

ED 214 653 PS 012 753

AUTHOR de Kane, Frances Pizzini-Zepeda
TITLE Young Children's Drawings as Related to Basic Communication Skills. Research Monograph No. 31.
INSTITUTION Florida Univ., Gainesville. P. K. Yonge Lab. School.
PUB DATE 80
NOTE 67p.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Communication Skills; *Developmental Stages; *Freehand Drawing; *Kindergarten Children; *Oral Language; Primary Education; Protocol Materials; Racial Differences; Sex Differences; Socioeconomic Status

ABSTRACT

The influence of graphic expression activities on kindergarten children's oral language expression was investigated. It was hypothesized that, regardless of the sex, race, or socioeconomic status (SES) of the subjects, children provided with an opportunity to express themselves graphically would talk more about a prior experience than children who were not provided with such an opportunity. To supply a common basis for drawing and story-telling, all subjects viewed an exhibit of South American Indian artifacts approximately one week before data were collected. Subsequently, individual interviews were held with each subject. Children in one control group were given a drawing of something they saw at the exhibit and were asked to tell a story about the trip to the exhibit. Children in a second control group were directed to color a drawing they were given. In the experimental group, children were directed to draw a picture of the trip to the exhibit. Manually transcribed and tape recorded oral data were analyzed for fluency and syntactic maturity. On the measure of fluency, significant differences between groups, regardless of sex, race, or SES were found. On the measure of syntactic maturity no significant differences were found. Drawings illustrating stages of graphic representation are included in the document and illustrated oral language protocols for the experimental and control groups are appended. (Author/RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED214653

YOUNG CHILDREN'S DRAWINGS

AS RELATED TO BASIC COMMUNICATION SKILLS

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

PS 012753

P. K. Yonge Laboratory School
College of Education
University of Florida
Gainesville, Florida 32611
Research Monograph No. 31

© 1980

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Ruth Duncan

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

YOUNG CHILDREN'S DRAWINGS
AS RELATED TO
BASIC COMMUNICATION SKILLS

by

Frances Pizzini-Zepeda de Kane

Winter, 1980

P. K. Yonge Laboratory School
University of Florida
Gainesville, Florida 32611
(904) 392-1554

This public document was promulgated to disseminate information to public schools at an annual cost of $1,055.00 or a per copy cost of $2.11.

CONTENTS

	Page
DEDICATION	i
ACKNOWLEDGMENTS	ii
PREFACE	iii
CHAPTER I--THE NATURE OF GRAPHIC EXPRESSION IN THE PRIMARY STAGES OF DEVELOPMENT	1
CHAPTER II--THE SIGNIFICANCE OF THE RELATIONSHIP BETWEEN VERBAL AND GRAPHIC EXPRESSION	8
Development of Graphic Form to Written Form	9
CHAPTER III--WHY THIS APPROACH?	11
CHAPTER IV--THE STUDY	12
Scenario Used for Interviews	16
CHAPTER V--HOW IT WAS DONE	18
CHAPTER VI--WHAT THE DATA SHOW	19
CHAPTER VII--SUMMARY AND CONCLUSIONS	24
APPENDIX A--CHILDREN'S SEQUENTIAL DEVELOPMENT IN SELF-TAUGHT ART	26
APPENDIX B--ORAL LANGUAGE PROTOCOLS	28
Control Group 1	28
Control Group 2	32
APPENDIX C--PICTORIAL PRESENTED TO SUBJECTS IN CONTROL GROUPS 1 and 2	36
APPENDIX D--ORAL LANGUAGE PROTOCOLS AND DRAWINGS, EXPERIMENTAL GROUP 3	37
APPENDIX E--PICTORIAL DECORATED BY SUBJECT IN CONTROL GROUP 2	56
BIBLIOGRAPHY	57

TABLES

	Page
TABLE 1--Composition of Subject Sample	14
TABLE 2--Composition of Research Groups	14
TABLE 3--Composition of Socioeconomic Levels According to Groups	15
TABLE 4--Group Differences for Variable-Fluency	19
TABLE 5--Group Differences for Variable-Syntactic Maturity	20
TABLE 6--Racial Group Differences, Group 3	21
TABLE 7--Sex Group Differences, Group 3	22
TABLE 8--Socioeconomic Group Differences, Group 3	23

DEDICATION

For Allison Sellers, Charles Kane, and all the children whose drawings have intrigued and delighted me for many years.

ACKNOWLEDGMENTS

With sincere appreciation to the children at P. K. Yonge Laboratory School, University of Florida, who participated in this research and to the children at Kilby Laboratory School, University of North Alabama, who contributed artwork. Sincere thanks also to the secretarial staff of the School of Education, University of North Alabama, and P. K. Yonge Laboratory School, University of Florida, who assisted in typing this manuscript. Final thanks to the faculties of both schools for their cooperation in this research.

PREFACE

The number of years in which I served as a faculty member in the College of Education at the University of Florida and as liaison between the Early Childhood and Elementary Teacher Education programs of the University and the P. K. Yonge faculty afforded the privilege of an exchange of philosophy and ideas with many of the laboratory school staff, particularly Ruth Duncan and Linda Henderson. Without that exchange, as well as the assistance of the elementary school faculty and students, this research would not have been undertaken in this particular fashion.

Ruth Duncan, Coordinator of Research and Development for P. K. Yonge Laboratory School, stated in the preface to Research Monograph #16, "We Like Making Pictures," by Linda Henderson:

> *The current focus on a return to "basics" applies the term in reference to the three R's: reading, 'riting, and 'rithmetic. Disagreement arise(s) . . . in the limitation imposed upon the term "basic" as applying simply to the three R's. To do so ignores a tremendous body of data yielded over the years by research in sociology, psychology, neurology, and education. Such data indicate dynamics operating within ourselves which exert a greater influence on us as learners than the level of competency we demonstrate as we read, write and do arithmetic. "Basic" are the effects of how we perceive, conceptualize and create, how we feel about ourselves as learners and as people.* (p. ii)

Basic to all learning are characteristic processes of growth and development involved in perception, conceptualization, and creativity. Too often, certain of these processes are overlooked in frantic pressures to help children achieve competency in what are essentially isolated and fragmented skills. An activity which may turn out to serve an essential coordinating function in the process of developing children's communication skills but one that is generally not highly valued by the average adult is free scribbling and drawing.

Creative graphic expression--scribbling and drawing--is a developmental factor, indicating aspects of perception, conceptualization, and motor ability, that is directly related to verbal communication. However, educators of young children have often failed to consider the artistic expression of children in the context of communication. P. K. Yonge children were used as subjects in this study specifically because they are uniquely fortunate in being allowed to engage in and benefit from the effects of both creative graphic and verbal expression.

Seldom has language arts research directly focused on the connection between these areas of communication, although two outstanding longitudinal studies have disclosed related findings peripheral to the original purpose of the investigations. Durkin's (1966) study of children who read before attending school indicated that almost without exception these children had demonstrated an early and consistent involvement in art production. Graves' (1977) research, investigating the process of written composition in seven-year-old children, suggested that for some children sequencing and clarification of plot developed through graphic expression. In addition, Platt (1977) working with inner-city, disadvantaged children successfully implemented a method of "grapho-linguistics" whereby children communicated ideas as picture symbols before transforming them into word form.

That internalization of information occurs through direct interaction with unstructured, concrete materials has long been indicated by Piagetian theory. Graphic expression involves direct interaction with unstructured concrete materials. It is also a form of graphic representation that reflects internal thinking. As this study has indicated, subjects who created their own pictorial stimuli verbalized at length and in detail about an extended array of experiences, building bridges of meaning as they drew. Conversely, verbal communication was clearly restricted for subjects in the two control groups by the imposition of structured pictorial material.

In general, subjects in the experimental group, who were not presented pictorial clues by which to recall the experience, still referred to what no doubt was the highlight of the field trip--the "demon", "devil dancer", "monster", "statue"--used as pictorial stimuli for the two control groups (see Appendix C). However, their reaction to this phenomenon, and to the trip itself, varied based on other factors personal to their environment. In terms of specific detail narrated, the verbal statements of children who created pictorial stimuli focused on individual facets of experience of particular relevance to them. If, as suggested by the results of this research, creative graphic expression, in fact, serves as a precursor and motivator of verbal expression, a vehicle for the spontaneous communication of thoughts and ideas is not currently being used in many educational settings.

CHAPTER I

THE NATURE OF GRAPHIC EXPRESSION IN THE PRIMARY STAGES OF DEVELOPMENT

Graphic expression constitutes motor activity involving the manipulation of tools and resulting in visual evidence of the activity. Together with verbal expression, it represents information previously internalized through exposure to external stimuli (Arnheim, 1971). Both expressive modes are forms of external representation that symbolically communicate internal thinking (Sinclair-de-Swartz, 1969).

The dual processes develop more or less simultaneously. In the sensorimotor stage of development, children babble in verbal expression and scribble in graphic expression. Early scribbles primarily represent motor activity, but research has indicated that, even as early as 15 months, children are interested in the visual results of scribbling activity (Gibson & Yonas, 1968).

All children scribble. Scribbles eventually develop into graphic symbols that children appear to create universally. They make these symbolic forms in all kinds of graphic media--paint, clay and fingerpaint. If graphic material is not available, children scribble in sand or mud or even in their food (Kellogg, 1969; see Appendix A for Kellogg's classification of children's sequential development in self-taught art). The sequence of graphic symbolization progresses from simple scribbles to complex forms and shapes (Arnheim, 1974). The same sequence has occurred historically from Neolithic cave art to pre-Renaissance painting (Read, 1943).

The following illustrations are examples of the manner in which children's scribbles progress from simple markings to complex forms and shapes.

The first example is a basic "uncontrolled" scribble--"uncontrolled" in that the markings are random. The example below was created by a seventeen-month-old child.

At this age children enjoy scribbling in the same way that they enjoy water play and dabbling in their food. They also are quite interested in their ability to produce such marks and if given a tool that does not leave markings will cease scribbling activity (Gibson & Yonas, 1968).

First Stage--Basic Scribble

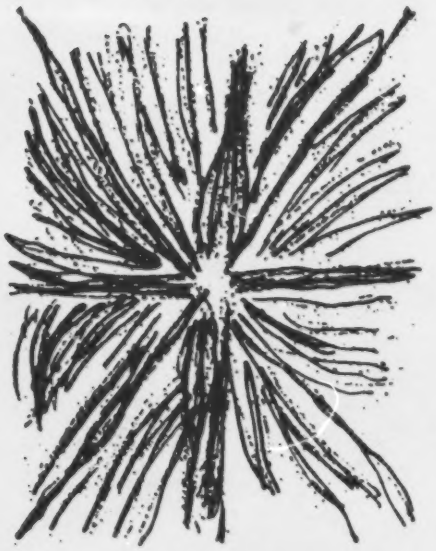
The second example, created by a child of twenty-two months, also is an uncontrolled scribble but is considerably more complex.

The third drawing can be classified as an example of the second stage of development. Characteristics of this stage are greater degree of motor control and careful placement of markings, as illustrated by Appendix A.

Second Stage--Placement Pattern

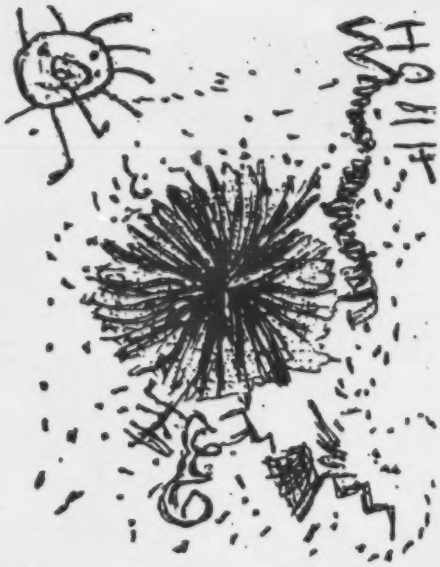
Third Stage--Shape Stage

In the third stage the scribbles begin to develop into definite forms and shapes.



A--Combine

B--Combine



C--Aggregate

D--Aggregate

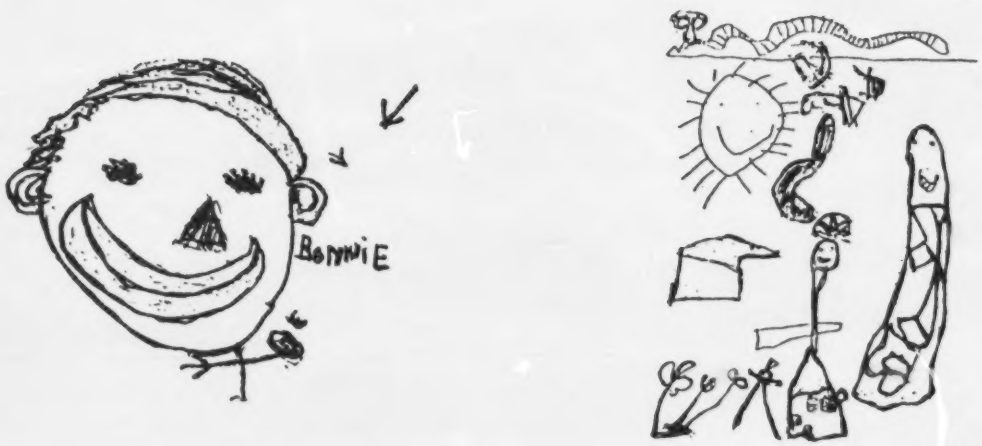
Fourth Stage

The above drawings are all examples of the fourth stage. The stages overlap and sometimes as many as three stages can be identified in one drawing. Drawings B, C, and D can be interpreted as indicating a transition from the Design Stage, stage 4, to the Pictorial Stage, stage 5.

The fifth stage is the first true "pictorial" stage. Prior to this stage, the forms that develop from the scribble stages are not intended to convey objects and are, therefore, pre-pictorial (Kellogg, 1969).

Fifth Stage--Early Pictorials

Fifth Stage--Late Pictorials



Humans are the first pictorials which children create. It is easy to follow the development of abstract forms from the combines and aggregates of the fourth stage to the human forms of this stage.

House, animal, and flower and tree forms also develop in sequential fashion from combines and aggregates. The following drawings illustrate the sequence of development of the house form.

Fifth Stage--Late Pictorials

CHAPTER II

THE SIGNIFICANCE OF THE RELATIONSHIP BETWEEN VERBAL AND GRAPHIC EXPRESSION

The significant relationship between verbal and graphic expression is based on the fact that both modes of expression are forms of symbolic communication. Symbolic communication involves the use of a sign or signifier to stand for or represent an idea, object, or event (Sinclair-de-Swartz, 1969). Oral language and writing are verbal forms of symbolic communication; drawing and painting are graphic forms. Children appear to move conceptually across the related modes of symbolic communication--verbal and graphic expression (Emig, 1977).

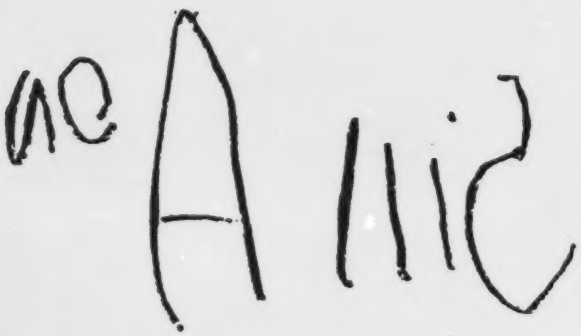
Both expressive forms externally represent internal thinking (Piaget & Inhelder, 1969). Language is the verbal representation of internal images. Graphic representation communicates mental imagery in concrete form, thereby providing visual evidence of internal thought processes. The dual modes of representing also are a form of symbolic play, which is the highest form of children's play (Piaget & Inhelder, 1969).

There is evidence that by engaging in symbolic graphic play--scribbling and drawing--children spontaneously develop a symbolic system that includes most alphabetic symbols (Kellogg, 1969). Other, related research has indicated a "parallel development between the achievement of forms in drawing and the achievement of forms in writing" (Brittain, 1979). The following drawings provide documentation of these phenomena. They also suggest that children's drawings have a potential for use as an informal, diagnostic and prescriptive tool for the assessment of pre-writing skills.

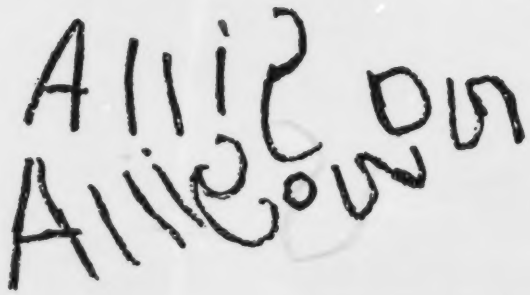
Development of Graphic Form to Written Form

"A" forms the human body

Developing alphabetic symbols



Written forms--letter displacement



Correct written form of child's name

Allison Sellers
Kilby Laboratory
Nursery School
University of North
Alabama

The drawings on the previous page indicate a degree of motor control allowing for a successful, natural transition to writing and a readiness for basic skills learning. The child who created them adds written comments to her artwork and illustrates her writing with drawing. Besides being extremely productive in graphic expression she is highly verbal and has begun to read.

Allison Sellers is three and one-half years old. When her drawings are compared with the sequence illustrated in Appendix A, they rank above the norm in development for this age group. Allison's parents state that she has been encouraged to communicate through art since late infancy.

CHAPTER III

WHY THIS APPROACH?

Emphasis on the acquisition of basic skills of writing and reading has focused interest on the development of oral composition. Studies that have investigated methods of facilitating oral composition for primary level children have frequently used pictorial stimuli such as filmstrips, flash cards, photographs, or wordless picture books to elicit language. This type of stimuli requires children to react to predetermined, structured stimuli.

Developmental theory has consistently suggested that motor activity with unstructured, concrete materials maximizes learning in primary level children (Almy, Chittenden & Miller, 1966; Piaget & Inhelder, 1969). Research has supported theory regarding the role of concrete activity in facilitating young children's learning. Visual imagery studies have indicated that kindergarten children generated language in paired associate learning tasks at the level of third grade children when given concrete objects to manipulate; otherwise, that is without manipulation of concrete objects, they could not do so (Levin & Allen, 1976).

Therefore, a strong developmental position exists for the use of self-generated pictorial activity as stimuli to elicit language. Graphic expression constitutes active involvement with unstructured, concrete materials. It is also symbolic representation that reflects internal thought processes basic to language development. However, most language studies do not appear to have used self-generated pictorial activity as a method of eliciting oral composition.

Basic communication skills--writing and reading--are critical areas of curriculum which need to be developed as early as possible in the educational cycle. Oral language expression is considered particularly relevant to the development of these skills. The inclusion of "language enhancing activities in language arts programs" has been identified as a contributing factor in the motivation of oral expression (Pflaum-Conner, 1974, p. 77). Graphic expression can usefully serve this purpose. An integral part of the symbolic system of communication, it is less abstract than language, thereby providing a concrete, visual referent for motivating oral expression.

CHAPTER IV

THE STUDY

The study hypothesized that graphic expression would elicit a greater amount of verbalization in oral composition than other, structured types of pictorial stimuli. The study also hypothesized that graphic expression would generate a greater amount of verbalization in oral composition than other, structured types of pictorial stimuli regardless of the sex, race, or socioeconomic status of the subjects.

The two research questions posed by the study were:

H_1: There is no difference between the effect of (a) X_1--presented pictorial stimuli, (b) X_2--directed activity with presented pictorial stimuli, and (c) X_3--self-generated pictorial activity as stimuli for eliciting oral composition based on variables of Fluency and Syntactic Maturity.

H_2: There is no difference in the quantity of oral composition generated by Group 3 subjects resulting from differences in sex, race, or socioeconomic status.

Subjects used in the study were the total population of fifty-five kindergarten children attending P. K. Yonge Laboratory School, University of Florida. The P. K. Yonge kindergarten population was selected for the study for the following reasons:

1. The Laboratory School setting is appropriate for experimental research.

2. The independent variable in the experimental group, self-generated pictorial activity, and the dependent variable, oral composition, are modes of representation with which P. K. Yonge students are familiar--thus, unusual methodological treatment was not a factor for this population of subjects.

3. The P. K. Yonge student population is balanced in terms of sex, race, and socioeconomic status and more truly reflects the distribution of these variables in the local population. Thus, stratification of subjects according to variables of sex, race, and socioeconomic status was essentially assured.

4. The initial motivational basis for the collection of data in all three of the research groups could be controlled by using P. K. Yonge students as subjects for the experiment.

TABLE 1

Composition of Subject Sample

Classroom	Total No.	No. Males	No. Females	Black Subjects
A	15	8	7	3
B	13	7	6	3
C	13	5	8	3
D	14	7	7	3

The total number of subjects was blocked according to race and then matched according to sex, as shown in Table 1, before assignment to research groups. Randomization procedures were followed in assigning subjects to one of three research groups to control selection-treatment-interaction biases. The composition of subjects according to groups is presented in Table 2. Composition of socioeconomic levels according to the three research groups is presented in Table 3.

TABLE 2

Composition of Research Groups

Group	Total No.	No. Males	No. Females	Black Subjects
1	18	9	9	4
2	18	9	9	4
3	19	9	10	4

TABLE 3

Composition of Socioeconomic Levels According to Groups

SES Level	Group 1		Group 2		Group 3	
#1 Low	1	7	4	7	5	9
#2 Upper Low	6		3		4	
#3 Median	3		3		3	
#4 Upper High	4	8	4	8	4	7
#5 High	4		4		3	
Totals	18		18		19	

The assumption on which this study was based is that self-generated pictorial activity would provide a better method of conceptualization for oral language expression than pictorial presentation of stimuli or directed activity with presented pictorial stimuli. Consequently, it was necessary to design the study so that each subject was exposed to an experience which would provide a common basis for interaction with pictorial stimuli. All subjects used in the study participated in a field trip to the University of Florida Art Gallery to view an exhibit of South American Indian artifacts approximately one week before data were collected. The gallery field trip provided a common basis for presentation of pictorial stimuli and collection of data.

Subsequent to the gallery trip, individual interviews were held with each subject. A written scenario was prepared and used for each interview. The same scenario was used for all interviews except for differences required to meet specific conditions for respective groups.

Scenario Used For Interviews

The general atmosphere of P. K. Yonge Laboratory School is relaxed. College of Education students attending the University of Florida assist teachers at P. K. Yonge as a required part of their preservice experience. College of Education faculty members frequently visit these classrooms during the entire course of the school year in order to supervise undergraduate students throughout the period of their field experiences. The principal investigator has been a faculty member in the undergraduate early childhood program at the University for some years. Consequently, P. K. Yonge children are used to seeing her on campus although they may not necessarily know her name. In addition, P. K. Yonge students enrolled in the middle and high school program at the Laboratory School frequently serve as aides to kindergarten and primary school teachers as part of their general curriculum. The principal investigator's son, Charles, has served several of the kindergarten teachers in this capacity and is generally known to kindergarten children and their older siblings attending the School.

In order to establish the necessary rapport with individual subjects, the following scenario was used to initiate interviews.

Hi, you're Blanton. I'm Frances Kane. Do you know Charlie Kane? He's my son. He goes to P. K. too. He's in high school. Do you know him?

After brief conversation, the following statements were made:

Do you remember the field trip you took to the Art Gallery with your teacher and the rest of your class the other day? Did you enjoy the trip?

Subsequent verbal interaction between subject and investigator varied depending on subject input. The rest of the scenario also varied depending on specific stimuli used.

For Control Group 1, the scenario was as follows:

This is a drawing of one of the things you saw at the gallery. (See Appendix C.) *What do you think about it?* (Time allowed for verbalization by subject.) *Would you like to tell me a story about the field trip to the Art Gallery?*

For Control Group 2, the scenario was as follows:

This is a drawing of one of the things you saw at the gallery. (See Appendix C.) *What do you think about it?* (Time allowed for verbalization by subject.) *I have some magic markers for you to use. I'd like you to color the drawing.* (See Appendix C.) *Would you like to do that?* (Time allowed for coloring.) *Now, would you like to tell me a story about the field trip to the Art Gallery?*

For Experimental Group 3, the scenario was as follows:

I'd like you to draw a picture of the field trip you took to the gallery. Would you like to do that? (Time allowed for pictorial activity.) *Now, would you like to tell me a story about the field trip to the Art Gallery?*

The approximate length of interviews was seven minutes. Verbal interaction with subjects in Control Group 1 was extended in order to insure an equivalent time frame for each of the groups. Oral data were transcribed manually (see Appendixes B and D) as well as tape recorded.

CHAPTER V

HOW IT WAS DONE

All interviews with subjects were conducted on a one-to-one basis. Specific pictorial stimuli based on the field trip were designed for each of the three groups. A photograph of an object which had been prominently displayed in the gallery collection was traced and transferred to hectograph paper and used as pictorial stimulus for the two control groups. (See Appendix C.) The third, an experimental group, was not presented pictorial stimuli.

Children in the first control group were presented the hectograph, reminded of the gallery trip, and were asked to tell a story about the field trip. Children in the second control group were presented the hectograph and reminded of the gallery trip. They were then provided with three magic markers, asked to color the hectograph, and asked to tell a story about the field trip. Children in the third group were reminded of the gallery trip, were given manila paper and magic markers and asked to create a picture of the field trip. They then were asked to tell a story about the field trip.

Oral data were measured according to two language variables of Fluency and Syntactic Maturity. Fluency is the mean number of words in recorded narratives. Syntactic Maturity is the average length of T-units, or independent clauses together with subordinate clauses, in recorded narratives. Both measures are variables of the Productive Language Assessment Tasks (PLAT) used by the High/Scope Foundation to assess the generative language of primary school children (Love, 1976).

CHAPTER VI

WHAT THE DATA SHOW

Analysis of oral data generated by subjects in the study was accomplished through multivariate analysis of variance (MANOVA) using the Statistical Analysis System (SAS) computer package (Barr, et al., 1976). For the first hypothesis--differences between the effect of presented pictorial, directed activity with presented pictorial, or self-generated pictorial activity in stimulating oral language--Groups 1, 2, and 3 were tested to determine differences on either the Fluency or the Syntactic Maturity measures. The test statistic used was Pillai's Trace where F (4,104) = 4.70, $p < .002$ (Barr, p.60). Significant differences on these two measures, Fluency and Syntactic Maturity, were found to exist among the three groups. In order to determine which variables differed among which groups, univariate analysis of variance (ANOVA) was used.

On the first measure, that of Fluency, a significant difference was found to exist among the three groups where F (2, 24) = 10.27, $p < .001$. Duncan's Multiple Range Test was used to determine which groups were different (Barr, p. 108). Analysis of the data indicated that Group 3 differed significantly from both Group 1 and Group 2 on the measure of Fluency. The null hypothesis on the measure of Fluency was rejected at .001 level. The mean number of words generated by subjects in each of the groups is shown in Table 4.

TABLE 4

Group Differences for Variable-Fluency

Group	N	Mean No. Words
1	18	33.11
2	18	31.33
3	19	78.26

Alpha Level = .05

df = 52

As indicated by Table 4, the mean number of words generated by subjects in Group 3 was more than twice the mean number or words generated by subjects in Group 1 and Group 2. Although all subjects in the study interacted with pictorial stimuli, the nature of this interaction was limited to the condition of the pictorial situation. In Group 1, subjects were presented pictorial material and interacted with stimuli only verbally. Group 2 subjects also were presented pictorial material, but manipulated and transformed stimuli by coloring the hectograph. Thus, they interacted with stimuli more directly and concretely. No pictorial material was presented to Group 3 subjects. Subjects in this, the experimental group, created their own pictorial stimuli. Group 3 subjects generated oral language to a significantly greater degree than subjects in the two control groups.

For the second measure of the dependent variable, Syntactic Maturity, univariate analysis of variance (ANOVA) was used to determine the existence of any significant differences between the three groups. The test statistic was Pillai's Trace, where $F\ (2, 52) = 3.37$, $p. < .05$. Again, to determine which groups differed from one another, Duncan's Multiple Range Test was performed. Table 5 shows the results of this analysis.

TABLE 5

Group Differences for Variable-Syntactic Maturity

Group	N	Mean No. Words
1	18	6.644
2	18	5.727
3	19	7.978

Alpha Level = .05

df = 52

Syntactic Maturity refers to the mean number of words in T-units. According to Table 5, Group 2 and Group 3 subjects were found to differ significantly from one another on this measure. Group 1 and Group 2 subjects did not differ significantly, nor did Group 1 and Group 3 subjects. The null hypothesis, therefore, was rejected for

differences between Group 2 and Group 3 subjects on the measure of Syntactic Maturity but could not be rejected for this measure on the basis of differences existing between subjects in Groups 1 and 2 or subjects in Groups 1 and 3.

The measure of Syntactic Maturity, or the average length of T-units, represents the degree of complexity of language in general use by subjects in the study. The study was not designed to develop language maturity, but since the groups were not pretested on this factor, the measure of Syntactic Maturity was used to determine the degree of language complexity demonstrated by subjects prior to the study. Although Group 3 subjects differed on this measure from Group 2 subjects, they did not differ from Group 1 subjects. Group 1 and 2 subjects also did not differ significantly from one another.

For the second hypothesis tested by the study, possible differences in the quantity of verbalization generated by Group 3 subjects resulting from differences in sex, race, or socioeconomic status, MANOVA was used to determine the existence of significant main effects. Race, sex, and socioeconomic status were examined separately to determine differences in these factors based on measures of Fluency and Syntactic Maturity. Pillai's Trace again was the test statistic used, where F (2, 16) = 1.55, p = .2430. Table 6 shows the results of racial group differences in Group 3.

TABLE 6

Racial Group Differences, Group 3

Race	Variable	N	Mean	Standard Deviation
White	Fluency	15	72.20	41.97
	Syntactic Maturity	15	7.55	1.87
Other	Fluency	4	101.00	67.26
	Syntactic Maturity	4	9.57	2.56

Table 6 indicates that no statistically significant differences were found between the oral language generated by white and other subjects in Group 3 based on measures of Fluency and Syntactic Maturity. The null hypothesis was accepted. Race does not appear to have been a factor in the oral language generated by subjects in Group 3.

MANOVA was used to determine whether male and female subjects differed on measures of Fluency and Syntactic Maturity in Group 3. Pillai's Trace was the test statistic used where F (2, 16) = 1.78, p. = .2008. No statistically significant differences were found between oral language generated by male and female subjects in Group 3 based on these measures. The null hypothesis also was accepted for the factor of sex. Sex does not appear to have been a factor in the oral language generated by subjects in Group 3. Table 7 summarizes these findings.

TABLE 7

Sex Group Differences, Group 3

Sex	Variable	N	Mean	Standard Deviation
Male	Fluency	9	84.77	57.09
	Syntactic Maturity	9	7.35	2.13
Female	Fluency	10	72.40	39.52
	Syntactic Maturity	10	8.54	2.06

The P. K. Yonge student population is stratified according to five socioeconomic levels (Table 8). Multivariate analysis of variance (MANOVA) was used to determine whether, based on oral language measures of Fluency and Syntactic Maturity, differences existed between subjects in group 3 representing these five levels. Pillai's Trace was used as the test statistic where F (8, 28) = 2.05, p. = .0761. Table 8 shows that no statistically significant differences were found between the oral language generated by subjects in Group 3 resulting from differences in socioeconomic status as measured by these two variables. Based on these two measures, the null hypothesis was rejected for the factor of socioeconomic status. Socioeconomic status also does not appear to have been a factor in the oral language generated by subjects in Group 3.

TABLE 8

Socioeconomic Group Differences, Group 3

SES	N	Variable	Mean	Standard Deviation
1	5	Fluency	95.20	23.40
	5	T-Unit	8.80	1.15
2	4	Fluency	33.75	29.01
	4	T-Unit	7.77	1.89
3	3	Fluency	56.00	53.11
	3	T-Unit	6.40	1.08
4	4	Fluency	132.75	31.54
	4	T-Unit	8.43	1.44
5	3	Fluency	59.00	42.93
	3	T-Unit	7.87	4.76

CHAPTER VII

SUMMARY AND CONCLUSIONS

Analysis of the oral data elicited from subjects used in this study indicated that children in the experimental group generated a greater amount of language in oral composition in response to self-generated pictorial stimuli than children in the two control groups. Verbalization in oral composition on the measure of Fluency for this group was statistically significant at a .001 level. These findings were consistent for children in the experimental group regardless of factors of sex, race, or socioeconomic status.

On the measure of Syntactic Maturity, oral data generated by children in each of the three groups indicated no significant differences between groups. However, the measure of Syntactic Maturity was used as a control to ensure that language used by subjects was relatively equal in terms of maturity. These data supported the equivalent sophistication of language used by all children who participated in the study.

Results of the study supported the findings of theory and research regarding the role of concrete activity with unstructured materials in facilitating language. Graphic expression was found to be more facilitative in generating language than other, structured types of pictorial stimuli regardless of the sex, race, or socioeconomic status of subjects. Perusal of the oral data generated by individual children in the experimental group clearly indicated that children in this group worked out their ideas while drawing and frequently referred to their drawing when verbalizing. (See Appendix D.) These data appear to indicate that graphic expression, which is an integral part of the symbolic system of communication, should receive greater emphasis in language arts programs, particularly at the primary level.

It must be noted that P. K. Yonge Laboratory School children are encouraged to verbalize both by their respective teachers as well as by the general ambience of the School. Nonetheless, children in the two control groups, who entered interview sessions full of questions and comments, generally ceased uninhibited verbalization when presented structured pictorial stimuli. Conversely, children in the experimental group frequently sang songs and rhymed words in accompaniment to their drawing, dramatically demonstrating the free and non-threatening nature of the graphic experience. Graphic expression, the stimulus condition used for the experimental group, is a self-generated conceptual process that externalizes mental images and provides visual feedback to the communication system, thus increasing interaction between the two modes of symbolic communication--verbal and graphic expression.

Graphic expression is a basic factor of development (Gibson & Levin, 1975). In creating their own pictorial stimuli, subjects in the experimental group engaged in graphic activity that provided a concrete interaction with unstructured materials. The condition designed for this group appears to have provided a relevant basis for verbalization regardless of sex, race, or socioeconomic status. For this subject population, externalizing mental imagery through pictorial symbolization appears to have established a foundation and provided motivation for generating verbal equivalents.

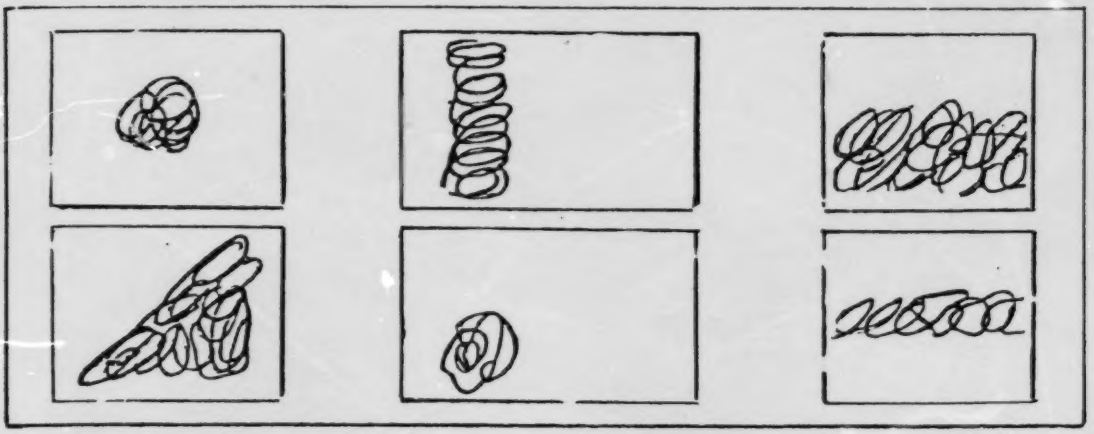
APPENDIX A

CHILDREN'S SEQUENTIAL DEVELOPMENT IN SELF-TAUGHT ART*

Ages: 18-24 months

First Stage--Basic Scribbles

Ages: 2-3 years

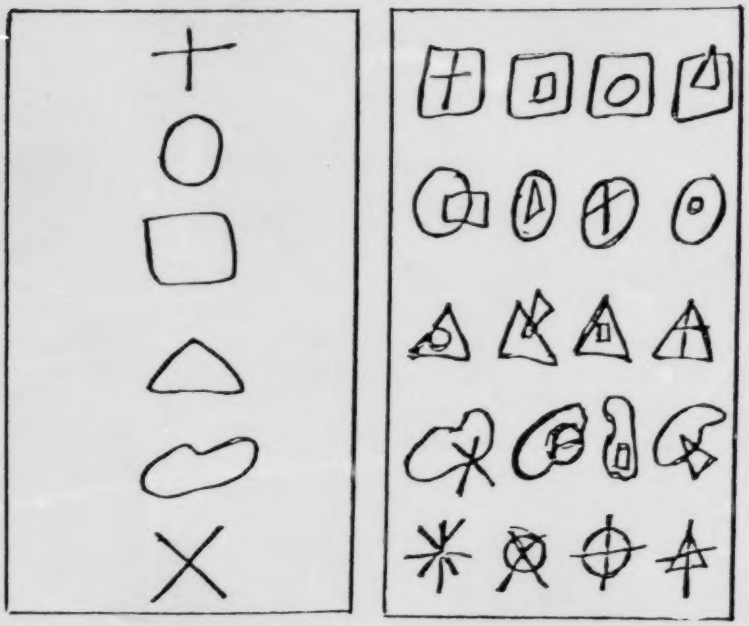


Second Stage--Placement Patterns

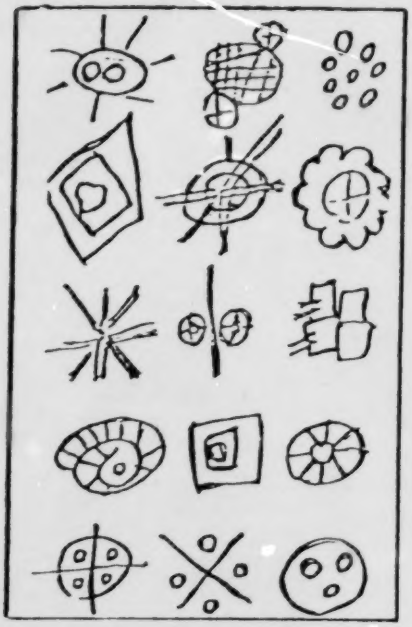
*Kellogg, R. "Analyzing Children's Art," 1969.

Ages: 3-4 years

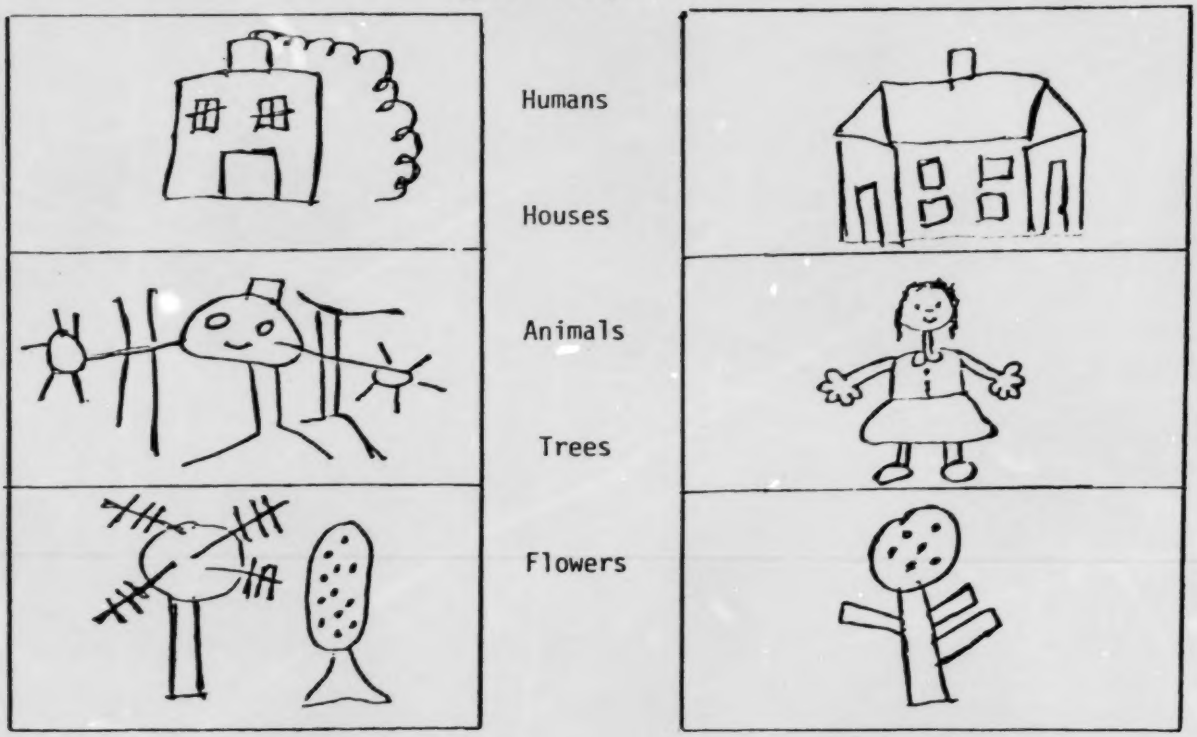
Third Stage--Shape Stage



Fourth Stage: Design Stage



Ages: 4-5 years



Early Pictorial

Late Pictorial

Fifth Stage--Pictorial Stage

APPENDIX B

ORAL LANGUAGE PROTOCOLS

Control Group 1

Oral data elicited from presented pictorial stimuli.

#1 I saw the devil made out of paper mache / and we saw some different kinds of straw hats / that's all I remember / that's all I remember.

Analysis: 26 words
4 T-units
Average length of T-unit: 6.0 words

#2 Well, I just went there and saw the _____ and stuff like that / and saw this man and stuff up there / _____ looks like a man / and I saw spoons they make / and I saw how they make baskets and hats and I saw mountains and stuff--pictures like mountains and stuff like that / and I saw a man in a kind of basket boat / and that's all.*

Analysis: 68 words
8 T-units
Average length of T-unit: 8.4 words

#3 First of all we had to walk alla way down there / and we had to look at some kinda idol that was standing up / and all the stuff was there we had to look at / we _____ stuff / and then we went outside and sat down and had a talk kinda / and then we went back to the classroom. [Subject continually moved arm across hectograph in cross-motor action.]

Analysis: 60 words
6 T-units
Average length of T-unit: 9.5 words

#4 They had a doll / and the indians made a _____ just like this one [indicating hectograph] / they weren't all dolls but they had a doll just like this one / they had a man / they had a woman too and a house / house had some flowers. [Subject verbalized extensively prior to directing verbal remarks to hectograph and was extremely interested in recording equipment.] **

Analysis: 43 words
6 T-units
Average length of T-unit 7.1 words

---

* _____ indicates undecodable words that are included in total word count.

** [ ] indicates investigator's comments.

Control Group 1

#5 We saw a big ____ _____ _____ / and then we saw a big thing out inna art gallery / it's like a thing what go on your head--just like this / just like this right here / then we saw hats in there / hats I mean / and we saw a head got a _____ round it / and we saw a lady had a split ____ ____ / and we saw a _____ through it / and we saw--we saw a picture going by itself / Miz Henderson showed a picture to the class / then we saw things just like hats and things / hats what we saw there.

Analysis: 105 words
13 T-units
Average length of T-unit: 7.11 words

#6 There was a tunnel that we went in / and people were working down in a hole in the ground [Description of route taken to the gallery] / there was dirt in a pile / that's all.

Analysis: 27 words
4 T-units
Average length of T-unit: 6.0 words

#7 Well, there was hats with different colors and a straw boat and two pictures of kittens / and one picture was a shoe / and a kitten was in it / and other pictures was hay / and the kitten was in it. [Two photographs of kitten, one in a shoe and the other playing in hay, hung in the interview room. Subject was describing these in the last two T-units.]

Analysis: 39 words
5 T-units
Average length of T-unit: 7.4 words

#8 [Don't you want to tell me a story?] No. [You don't want to tell me a story?] Yeah. I don't know what to tell ya. I don't know what to tell ya. [Subject verbalized extensively in general conversation about the weather, the interview room, the investigator's purpose, etc., before being presented the hectograph.]

Analysis: No story elicited.

#9 It was fun / I saw all sorts of things / and I saw this one hanging up / [indicating hectograph of object] (Does that say up?) [Subject wrote on the hectograph] I saw this one standing up on that big thing--a kind of thing--big thing / it was hanging there.***

Analysis: 36 words
5 T-units
Average length of T-unit: 7.2 words

*** ( ) indicates verbalization not included in total word count.

Control Group 1

#10 He had round eyes like light bulbs / and that's all I know about the trip and the picture.

Analysis: 18 words
2 T-units
Average length of T-unit: 9.0 words

#11 We saw some masks like this / something like that _____ in _____ with a kind of _____ light / this looks like one of the statues that was there / that's all I know about the trip to the art gallery.

Analysis: 39 words
4 T-units
Average length of T-unit: 9.3 words

#12 We saw this / but when we went to the art gallery it didn't look just like this / it looked like a snake or the back of a snakeskin / and we saw some pictures there too.

Analysis: 36 words
4 T-units
Average length of T-unit: 9.0 words

#13 Already talked too much about the gallery / I was a boat--a one man boat at the art gallery / that's all I know.

Analysis: 23 words
3 T-units
Average length of T-unit: 7.2 words

#14 (I don't know anything about it.)

Analysis: No story elicited.

#15 We walked / we saw things like this / they had a boat there / and there's this big thing / and it had eyes made out of light bulbs / there was a bull there and a rooster fight / I don't know what else.

Analysis: 40 words
7 T-units
Average length of T-unit: 5.5 words

#16 (I forgot what I saw.)

Analysis: No story elicited.

#17 (I don't know anything about it.) I only know this is a devil dancer / and I saw this mask / and I don't know what else / I did see something that was supposed to be a bull / I don't know anything else either.

Analysis: 36 words
5 T-units
Average length of T-unit: 7.1 words

Control Group 1

#18 No story elicited.

No story elicited from 4 subjects in Control Group 1.

Control Group 2

Oral data elicited from directed activity with presented pictorial stimuli.

#1 What gallery--I went to the art fair / that's what I saw / (I saw) a big person--has all kinds of colors and jewels and things on him--all kind of colorful jewels and beads and bow things on him / I saw a boat / and I saw some rocks and houses that had little crosses on them / that's about all _____ things.*

Analysis: 60 words
6 T-units
Average length of T-units: 10 words

#2 Do you know how old I am? [Um-m] What are you trying to do? [I'm trying to find out about children's storytelling.] How come you want me to color this in? [Because after you get through I want you to tell me a story about your trip to the gallery where you saw that.] Are you going to take this home with you? [Um-m] What's going to happen then? Want it back when I get through? [Um-m] I want to put my name on it. I'll use blue for my name. Do blue and red make black? [Try it.] With these? [Um-m] I want to make red grass. [Subject drew baseline on the pictorial.] Does this (red) turn black if I use blue? [Um-m] It's turned to black. Do you want me to tell a story? [Yeah.] I'm thinking of a story. How come you want people to tell stories like this? Most of the time I don't tell stories, I just let my mom read books. Do you tell stories at home? [Um-m] To your mom? [Um-m] Do you want to tell me one now? [No.] You don't want to tell me one now? [No.] Do you want it (the pictorial) back? When? [Um-m] What's under here? Are those different (pictorials)? They look like the same ones.

Analysis: No story elicited
Verbalization not related to the assigned topic.

#3 Well, field trip it was fun / we ____ ____ saw some toys / we got to see a statue / we got to look at a big old boy / we got to see some glasses--glass stuff / we got to see some big old house / and the house ____ ____ had a basket / that's all I know right now.

Analysis: 57 words
8 T-units
Average length of T-unit: 7.1 words

#4 People showed us around / some daddies came / we saw lots of art pictures / we saw pots / I can't remember anything else to tell you.

Analysis: 24 words
5 T-units
Average length of T-unit: 4.8 words

---

* Words in ( ) indicate words implied by the general meaning of the phrase and not included in the total word count.

Control Group 2

#5 I don't know anything about the trip / I don't know anything about the trip.

Analysis: No story elicited.

#6 I think that looks pretty / [indicating hectograph] and I'm glad the art gallery came / that's all I can think of / I can't remember anymore.

Analysis: 22 words
3 T-units
Average length of T-unit: 7.1 words

#7 (I'll color like I'm supposed to. Right? [Subject began coloring hectograph.] I like doing it that way. If the lines get too close to other lines you got to color it in. These tables don't get dirty. If the kids don't get the tables clean, Mrs. _____ has to clean them. The magic markers don't come off and they have to be scrubbed real hard, real hard. There's red here, too, right? Do you have another picture like this? I thought you had one--colored ones. Didn't the other kids do this? One maybe used that one [referring to uncapped magic marker]. I stay in the lines. See, I stay in the lines. The lines [magic marker lines] don't go out. Sometimes some of us get out of the lines. Is this a line? Oh--there's the bell. I can't do this [complete the hectograph] because then a lot of people gotta wait for me. [Subject continued coloring--bell was for another class]. Too much noise out there. In the little office [referring to interview room] we've got to do something important. You know what we already did the last day in February? [No] A long time ago, on February, you know what we did? [U-mm] We sat down in here at the tables and they were all clear. That's what we did in February--sad or happy--that's what we did in February. We're a long way from February, right? After February comes March. I'm still coloring. I don't talk very much. After me who will you need? [I don't know] You gotta choose somebody. Who are you going to pick? You know all the names. The children have to pick other people who they want _____ pick sometime. OK, I'm through. Now I'll tell you a story about the field trip.)

Story elicited: There were little flowers and a castle and little houses / and a man had a _____ _____ and a hat maker and a flower maker / and we saw some toys and baskets / and we saw some big straw _____ / and we saw some instruments / and that's all we got to see / then we went outside and _____ looked in the other museum / and it was just chairs and stuff / and we looked at a _____ movie. / and _____ changed it and put on a Mickey Mouse film for us (Have you gone to Disney World? I think Disney World is great. There's all movie stars and a big castle at Disney World. Right? I've seen all of them at Disney World and I got to dance with them.)

Analysis: 91 words
10 T-units
Average length of T-unit: 9.1 words

Control Group 2

#8 (The real devil doesn't look like that 'cause I've seen it in the Bible. It's a big bible about like that, [indicating size with hands] and there's an even bigger book that we have at home. Who made the outlining? [irdicating hectograph] Do you remember? [Um-m, I don't think so.] I think I'll use pink. Almost done with the devil. Oh-oh! Messed up.)

Story elicited: Once at my home there's this dog chasing my cat. There's no dogs allowed to be there. Somebody just broke loose and he came out barking. I don't know what happened next , I screamed so much. He just came into the bushes barking. I don't have anything to tell you about the art gallery, I have to go now.

Analysis: No story elicited specific to the topic.

#9 We see these hats / and I saw these two lady masks / and I saw the big statue / and I saw those little villages that have things like cactuses--and churches / and I saw these little benches to sit down / I saw some baskets / and I saw a big giant boat and a little tune--a little music thing / OK--that's all the story I know about the trip to the art gallery that day.

Analysis: 76 words
8 T-units
Average length of T-unit: 9.4 words

#10 (I know where this came from. It came from the museum. Which color shall I use. Red. Which ones come in here? [Indicating which subjects were being interviewed.] Who do you want next? I don't want to color his eyes. I want to use another kind of color. Oh. I'm tired.) [Subject started singing, began drawing on the hectograph.]-(See Appendix E.)

Story elicited: Well, I like the art gallery / and I like everything in the art gallery / and there were some scary things there / that's all.

Analysis: 23 words
4 T-units
Average length of T-unit 5.3 words

#11 There was a bull there too / [referring to the gallery exhibit] sometimes he be where horses race / and--uh bulls like to chase peoples / bull breaks through window / that's all.

Analysis: 24 words
4 T-units
Average length of T-unit: 6.0 words

#12 We walked there / we saw costumes and Indians and masks made out of paper mache / we saw churches / we saw stuff on top of people's roofs / and I can't think of anything else to tell you anymore.

Analysis: 37 words
5 T-units
Average length of T-unit: 7.2 words

Control Group 2

#13 Well let's see / when I was in the gallery I saw this indicating hectograph and bulls that were pretty / let's see--they were blue-yellow and all colors / all of them were dark colors / but there wasn't two kinds of blue the same / and I saw one being made at the art gallery.

Analysis: 50 words
6 T-units
Average length of T-unit: 8.2 words

#14 It's just a picture / [Don't you want to tell me a story about where you saw this?] (No, No, No.)

Analysis: 4 words
1 T-unit
Average length of T-unit: 4.0 words

#15 (I want to draw. I want to make a picture of my Easter basket. I got a cousin that's three years old. I'm going to make lots of threes. This dries up so fast [indicating magic marker]. [Subject started singing.] It looks like--it looks like a butterfly, don't it [indicating line made with magic marker]. Look! Look! Look at this! You don't know what this looks like. Now wait. It looks like a dragon. Don't it look like a dragon?) [Subject completely obliterated his own symbols and outline of hectograph.]

Analysis: No story elicited.

#16 No story elicited.

#17 No story elicited.

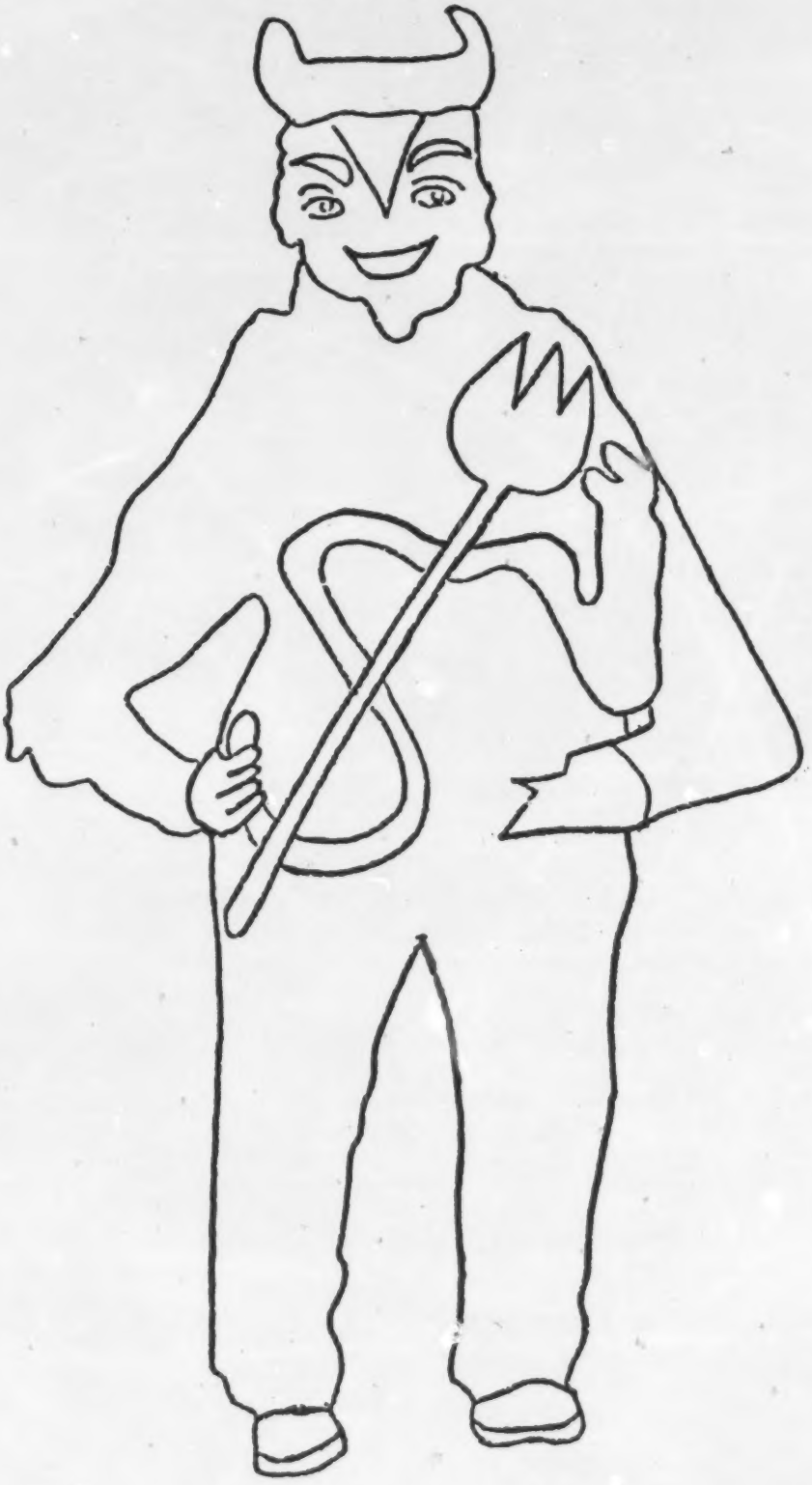
#18 There was this man--a statue of a man all painted up with flowers and with light bulbs where his eyes oughta be / they lit up too / and some dog masks were there--not real dogs either / and some bulls with flowers round their necks were there / and a house and some people there in the houses / and I liked them all / and I had a good good time at the art gallery / and the teachers were nice / and all the good things there were nice.

Analysis: 96 words
9 T-units
Average length of T-unit: 10.6 words

No story elicited from 6 subjects in Control Group 2.

APPENDIX C

PICTORIAL PRESENTED TO SUBJECTS IN CONTROL GROUPS 1 AND 2



APPENDIX D

ORAL LANGUAGE PROTOCOLS AND DRAWINGS

EXPERIMENTAL GROUP 3

Oral data elicited from self-generated pictorial stimuli.

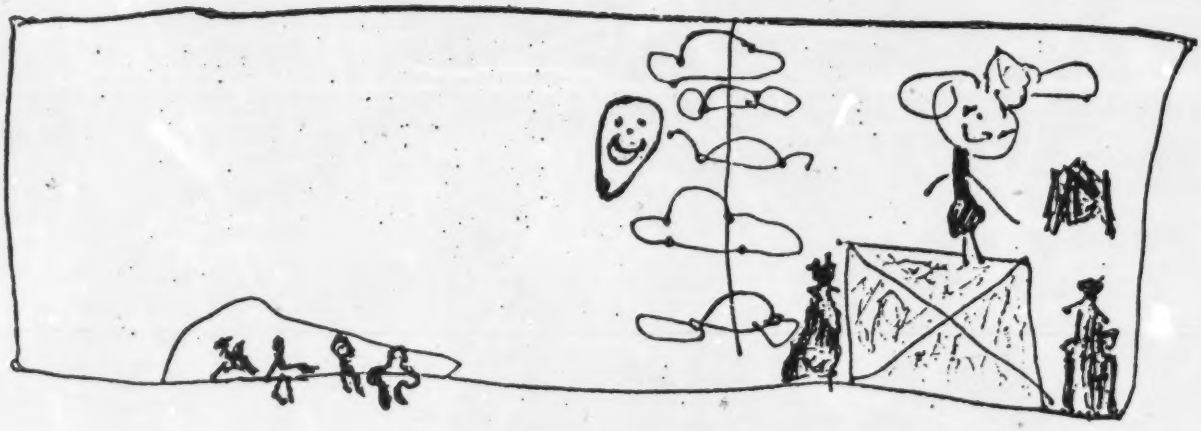
#1 Well I'll tell you some things that I saw there / See here--there was this kind of costume / and it had beads--kind of beads that shined / well I'm scared--I can tell you / see the art gallery here / you know what I saw in there / I saw _____ _____ / they're made out of tires / they were _____ sandals that were made out of rubber tires / (Now I have to make a picture of my dad. My sister is bigger than me but we're twins. His head wouldn't be up there [Subject drawing father]. I'll erase the chalk. I can finish this really quick--it's lunch time.)

Analysis: 66 words
9 T-units
Average length of T-unit: 7.3 words

Experimental Group 3

#2 First we saw this _____ / something on his head / now besides it were these little desks right here [subject drew desks] / these are miniature ones / (now-now-now)* some masks right here--(here)--over here we saw a dog mask (now I'm going to color them in ____ ____ gotta use this again--what was I thinking of?) / I went to the art gallery / and this is a big telephone pole right here [subject indicated drawing] / and there's some hats right here [subject indicated drawing] / and over here is miniature costumes [subject indicated drawing] / and there's masks over here [subject indicated drawing]--called the mask of death / and there's a dog mask ____ ____ ____ ____ [subject indicated drawing] / and these are good luck dolls they have / and these are costumes [subject indicated drawing].

Analysis: 92 words
13 T-units
Average length of T-unit: 7.1 words



Experimental Group 3

#3 It was something there--a monster / He lives in a cave--real spooky (I don't really know how to make one in drawing. I can do that a little bit better if I _____ _____.) [Subject began singing "Puff, the magic dragon . . .]

Analysis: 13 words
2 T-units
Average length of T-unit: 6.1 words

Experimental Group 3

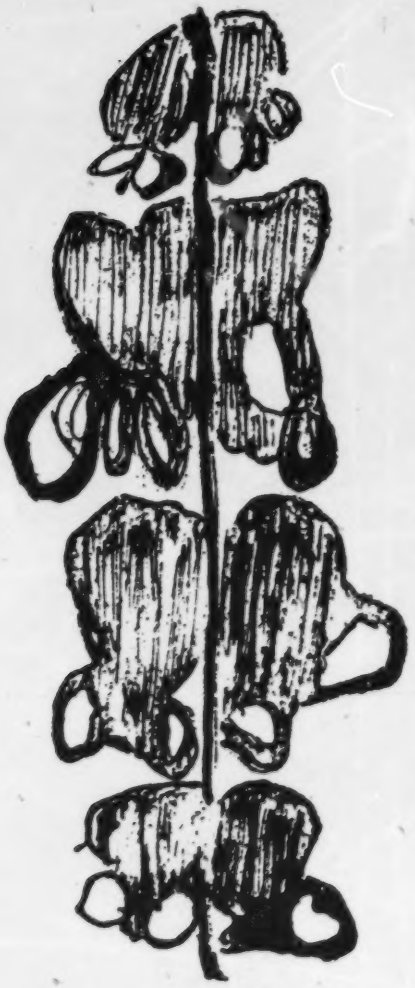
#4 There was a lady / this lady she had a big eye-ball and silver teeth and her hair's black / there was a devil too / (I'm going to make it a skinny one. [Subject drew a skinny devil] and I'm going to make a smiley face. There.) / and we saw these pottery things / that's all--and all I want to say.

Analysis: 37 words
8 T-units
Average length of T-unit: 4.5 words

Experimental Group 3

#5 It's the hats [indicating drawing] / they were on a big string / and there's stools where you could sit / and there was a boy devil / he had play diamonds on him / and they looked like real--all different colors all the way down / they had the hats on a real long string / and Mrs. Henderson she showed how men weared it a long time ago / he had diamonds on his pockets too [Subject added to drawing of the devil.]

Analysis: 69 words
9 T-units
Average length of T-unit: 7.6 words



Experimental Group 3

#6 They've got pretty feathers [indicating drawing] / 'cause I like all their feathers / and I like all the _____ dark things they got with feathers / and I like their Indian suits / I like them because they're pretty / and they have nice clothes / and they have nice friends / I remember seeing something else / I saw a big man stood up on a big base / and it was pretty / and he had all beads on and all stuff--beads and pretty marks and designs on him / and he had bells and all that stuff on him / and he had Christmas tree things on / and that's all I remember.

Analysis: 103 words
14 T-units
Average length of T-unit: 7.5 words

Experimental Group 3

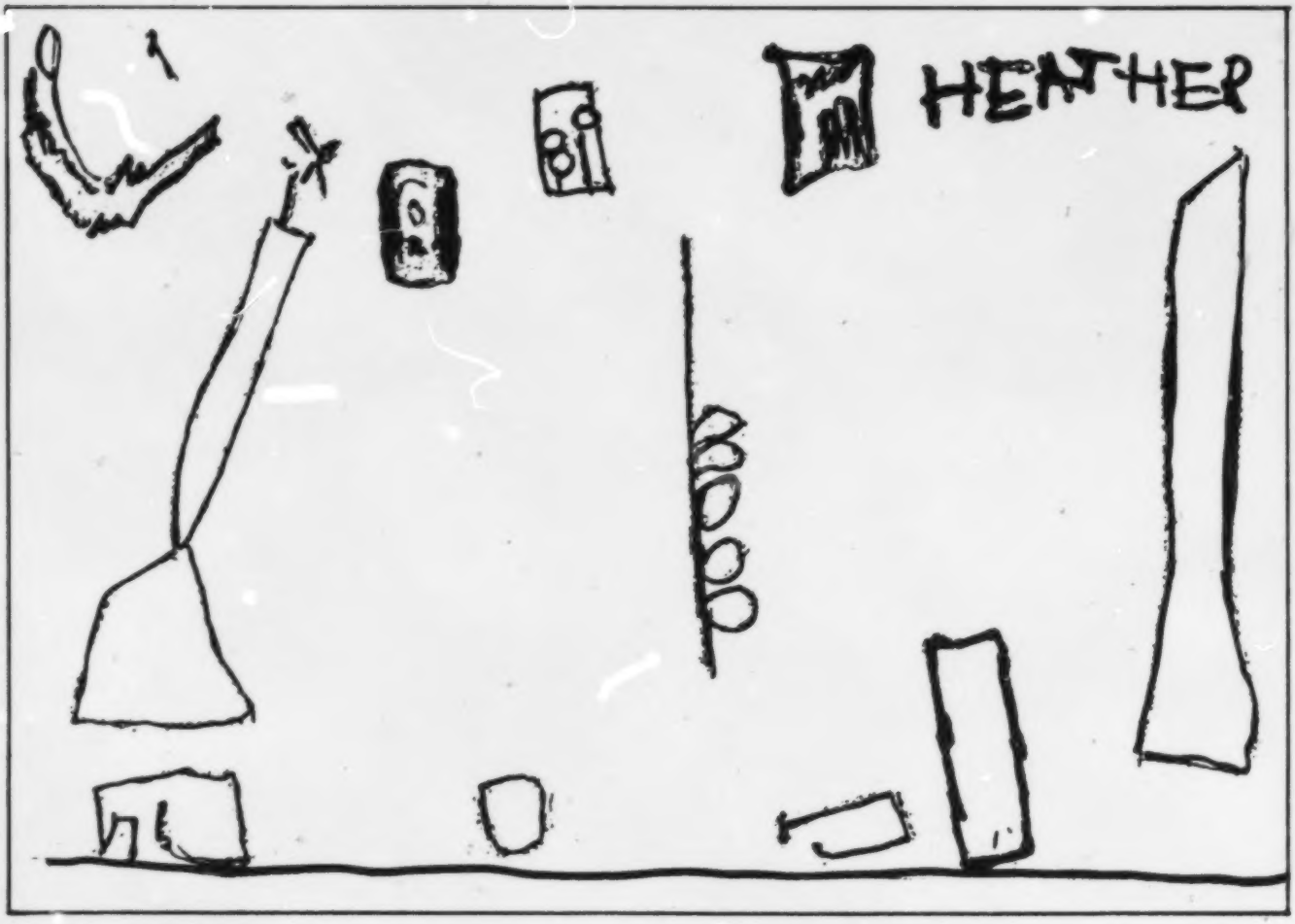
7 I had fun at the art gallery / there were two art teachers / the first one that came in said sit down on the floor / and then they said be real careful / and then they had these pictures you could pass around and look at / and they had this big mannequin that was dressed up as a monster that they had hung up on the wall / and they had light bulbs that they used for the eyes and decorated them / [Um-m--U-mm] [Is that all?] That's all.

Analysis: 81 words
8 T-units
Average length of T-unit: 10.1 words

Experimental Group 3

#8 This is where we were in the art gallery [indicating drawing] / and we were talking about the big _____ pictures / and that's a hat lying there [indicating drawing] / called it the smush ____-the smushed hat because it looked like it was smushed / saw two of them on the shelf when we got up from the yard / and that's one--and one / and that's one [subject drew "smushed" hats while speaking] / that's a mask that they use when they go for Halloween [drawing mask] / and that's the boat in the back / and that's the stuff that they use for fishing [drawing while speaking]. (I didn't quite finish that [item in drawing].) (Now I'll finish. Now I'll finish. I've finished. Finished.)

Analysis: 88 words
10 T-units
Average length of T-unit 8.8 words



Experimental Group 3

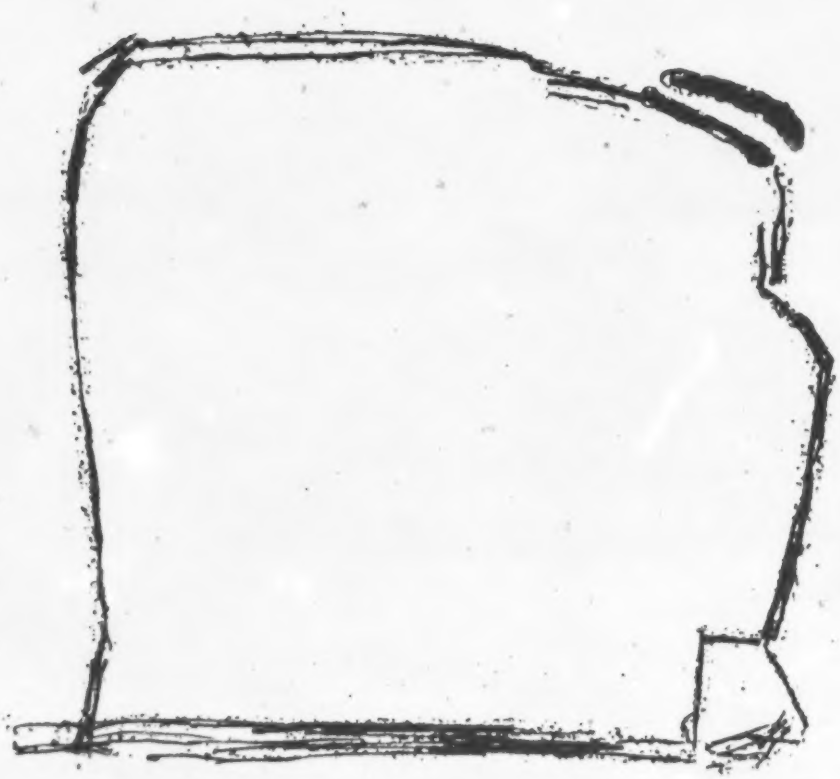
#9 Some hats [drawing hats] and there was a little boat and a house ____ / and little people that make hats / that's Mrs. Henderson and that's me and that's the hats at the art museum [indicating drawing] / Mrs. Henderson is looking at something / and I'm looking at Mrs. Henderson / we sat on the floor and listened to Mrs. Henderson / and they passed the boat around / and they made a harmonica play / and Mrs. Henderson was standing up / and we were sitting down / and we got to get up and look at stuff / we saw some toys / we couldn't touch the stuff because it maybe might fall / and Mrs. Henderson told us to keep our hands behind our backs / and J_____ was touching the glass / and Mrs. Henderson told him to keep his hands behind his back / that's all.

Analysis: 133 words
18 T-units
Average length of T-unit: 7.7 words

Experimental Group 3

#10 I didn't see very much because I was kicked out / (I said I didn't see very much because I was kicked out) I did see the devil because he was standing up on a big _____ box / he was standing on some big block or something / and one was sitting on a chair just like that one [indicating chair in interview room] / and see--the things in the gallery they looked good--they looked good / people did that / and the people that did that they worked very hard didn't they? / and I'll tell you something but don't write it [off topic] / that's all I saw.

Analysis: 86 words
9 T-units
Average length of T-unit: 9.5 words

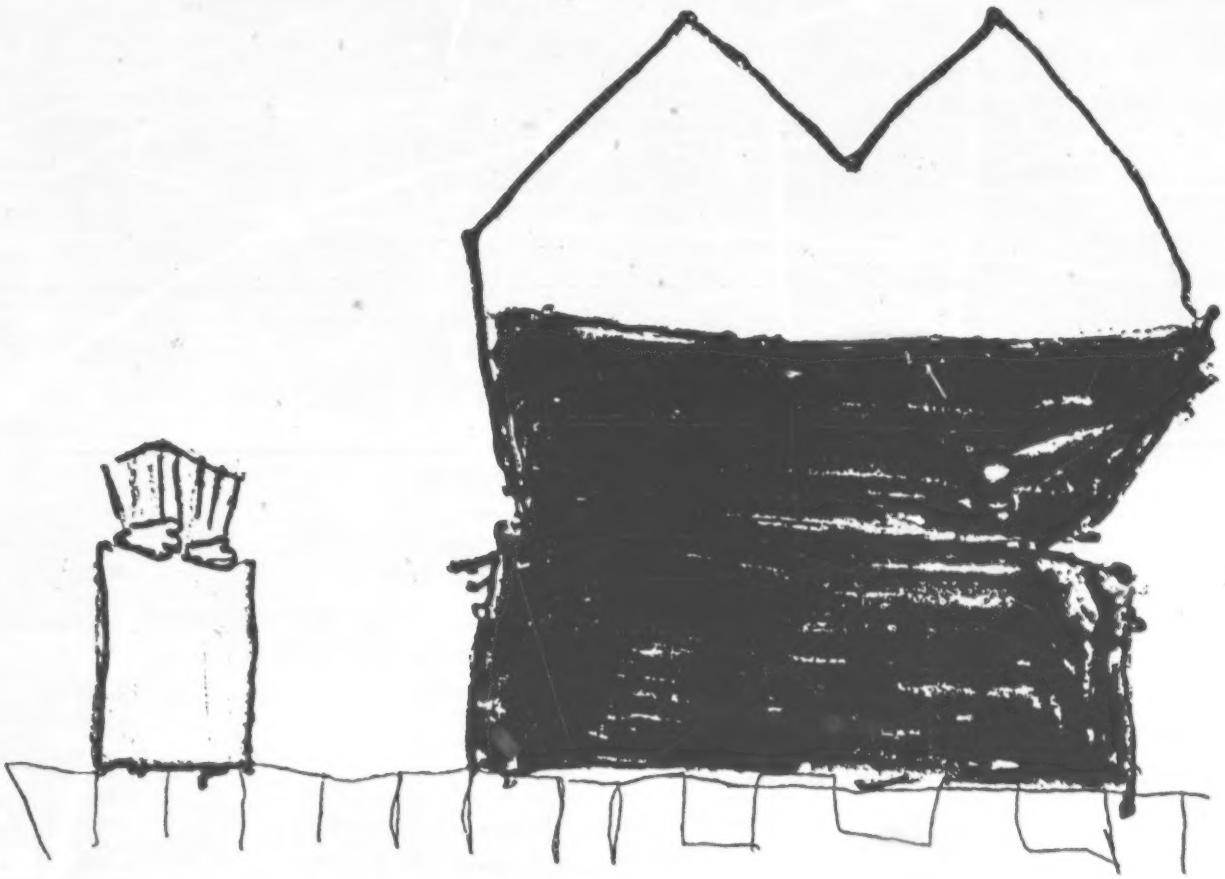


Experimental Group 3

#11 (Is this going to be boring? [I hope not. I want you to draw a picture of the field trip you took to the art gallery the other day. You can use these magic markers.] Oh boy! Goodie! All mine! Am I the first one? Wish I had a white one [magic marker]. Do you have any black? [No, I don't think so.] Brown? [Subject tested magic marker.] Yep. It's brown. Ye-ew. It stinks [referring to the odor of the magic marker]. I need green. I'm making that big monster thing that looked like a monster. Oh-h-h, you are a nice _____ [referring to drawing]. That's how I wanted _____, and that goes _____ _____ and then the big boat [subject verbalized as drew.] Just a minute. I forgot something [subject wrote name.].)

Story elicited: Well it's supposed to be kinda like a _____ of what happened on the trip / it's a--it's a _____ _____ thing and a kinda of a monster thing--sickening--yeah / I mean sickening--just like that [indicating drawing] / that's the floor / that's a thing / and it's kinda like that / and that's a devil--a kinda monster / but that's a house ___ ___ ___ ___ . [Subject stated prior to drawing that he did not recall the field trip.]

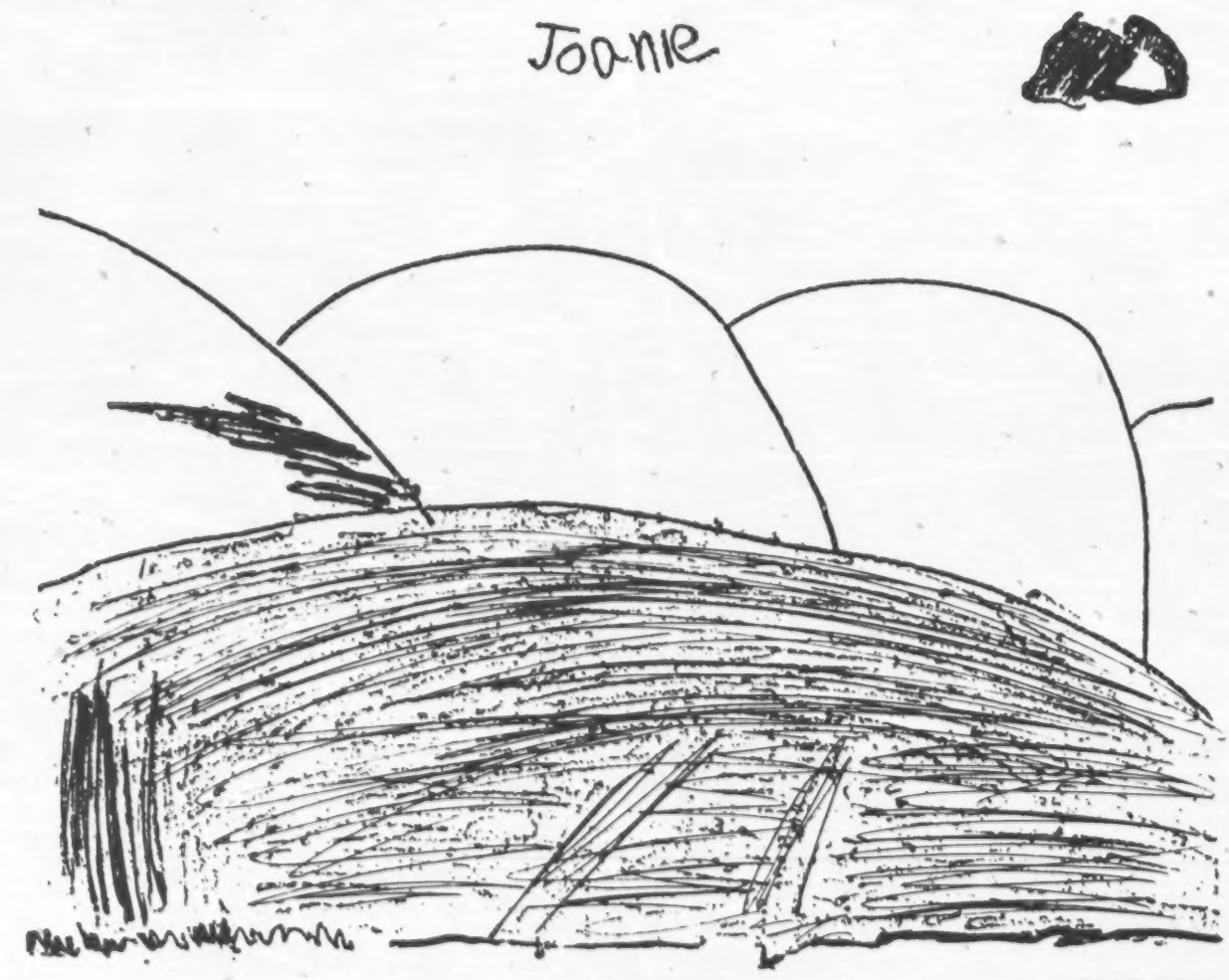
Analysis: 63 words
8 T-units
Average length of T-unit: 7.7 words



Experimental Group 3

#12 I can't remember. I can't remember. It looked like this.

Analysis: No story elicited.



57

Experimental Group 3

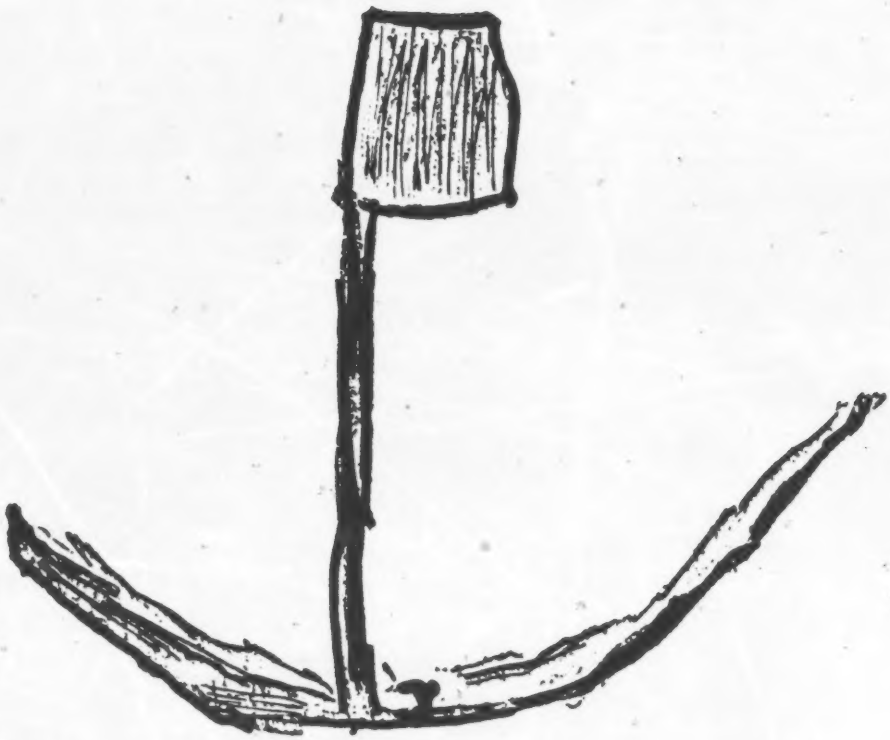
#13 Supposed to drive / then we had to walk / After we went there we had to go back to school / but while we were there we had a good time / the teacher went--the art teacher--Mrs. Henderson / she showed us around--all around the art gallery / and she told us a lotta things about the stuff / the dolls and houses and all the things that were there / and she showed us a movie / I'd seen it all before / one day I went with my folks / that's why I don't want to draw one today. [Subject refused to draw.]

Analysis: 94 words
12 T-units
Average length of T-unit: 7.8 words

Experimental Group 3

#14 I saw a Chinese hat / and I saw a boat made out of straw--dried up straw / It was yellow. (It's just like a triangle. That's just a triangle. It's just a filled-in triangle.) [Describing hat being drawn] that's all.

Analysis: 22 words
4 T-units
Average length of T-unit 5.2 words



Experimental Group 3

#15 I'm drawing a picture of what I saw / that's what I already drew on my gallery picture [indicating drawing]. [Subject started conversing extensively off-topic.]

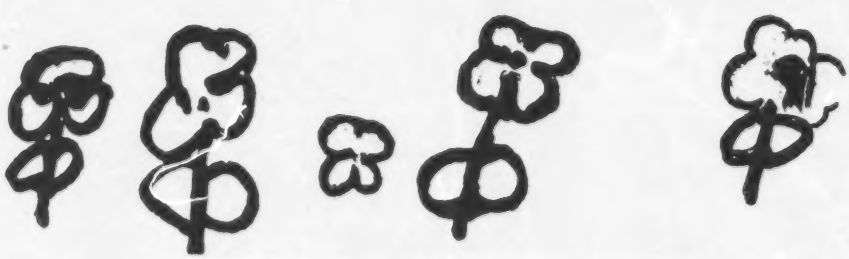
Analysis: 17 words
2 T-units
Average length of T-unit: 7.3 words

Experimental Group 3

#16 (I can draw? You mean I can draw anything I want? Let me think while I'm doing this. Want to _____ _____ _____?)

Story elicited: It was special / It was special for me at the art gallery / My dad was there / just there to be with me / There's this lady who took us around [indicating drawing.] / (I need a flat piece of chalk to draw this. I don't know what it's going to be yet. Have to find out what it looks like. It's anything you want it to be see. Anyway's--hey! It went through here [indicating drawing.] I might color it red and _____. I might decide for it to be a space ship. Some day I'm gonna color it in. What color is this? It's sorta a goldfish color.) Anyways--this lady she took us over and showed us around / we saw lots of things--statues and boats and things / one big statue / a man--a man with big buggy eyes / he was all lit up--lit up--see / there were masks too / one dog mask that looked fierce / and a bull too but he didn't look fierce / looked kinda sweetish / had flowers on him and was pink or something / flowers--gar___, gar___, gar___ something the lady called 'em (garlands) / flowers were all colors--like this [indicating drawing] . / but the big statue--he was something else--he was / I guess I liked him the best / but I can't draw him too good (that's not how--that's not how either--no good). [Subject referring to drawing.]

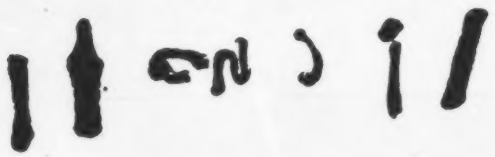
Analysis: 137 words
20 T-units
Average length of T-unit: 6.8 words



Experimental Group 3

#17 I'm going to make one of the pots--the big one--the biggest one / it was kinda pinkish--that pot (you know what none of these colors are the right ones). / we walked / we walked just on down there--we did / boy that was a pretty long old walk / you know we walked from this very classroom / we had to wait at the door--wait at the door--wait at the door and wait at that darn old door / when I finally went home do you know what I did / I fell asleep in the car / I just fell asleep on the way home / (Are all these magic markers yours? This one yours? Where did you get 'em from? You know what? I have to draw real small to get some of these things in here that I saw--indicating drawing. I know--I'll flatten em out. This'll be me. This'll be my _____. Look how _____. That's one half of it. There. Now I'll draw the other half on the other side [of the paper]. Look how small I drew it. I drew it so small that I bet you think I'm a small drawer. You know what? This person [indicating drawing] he has a slant _____ bigger than this one.) Anyway about the art gallery--I asked if I could have him but they said nope.

Analysis: 109 words
11 T-units
Average length of T-unit: 9.9 words



Experimental Group 3

#18 I saw flowers and little people and dolls and toys and canoes and lots of m____ and masks and hats--straw hats and pictures and guitars and little gardens and big gardens and little canoes and two big canoes / and they're made out of straw / and I saw a rose / and like the one we have at my house / (we have a rose bush at my house) and some of the roses came offa the art gallery stuff / there was this big blue thing (My daddy has a blue truck) / and some tools were there that they use--and some spoons / (my daddy has a tool box--I think I'll draw it in here too. Yesterday when the tornado start it blew the tool box offa the truck. Kinda broke it.) I know what else about the art gallery trip / we sat on the floor / and Miz Henderson she told us about some of the things / the things that people made / and after we got back I tried to cut some flowers / some flowers out of paper that I made / just like the flowers at the art gallery they were / they weren't too good--not just like / but not bad they weren't --like this [indicating drawing].

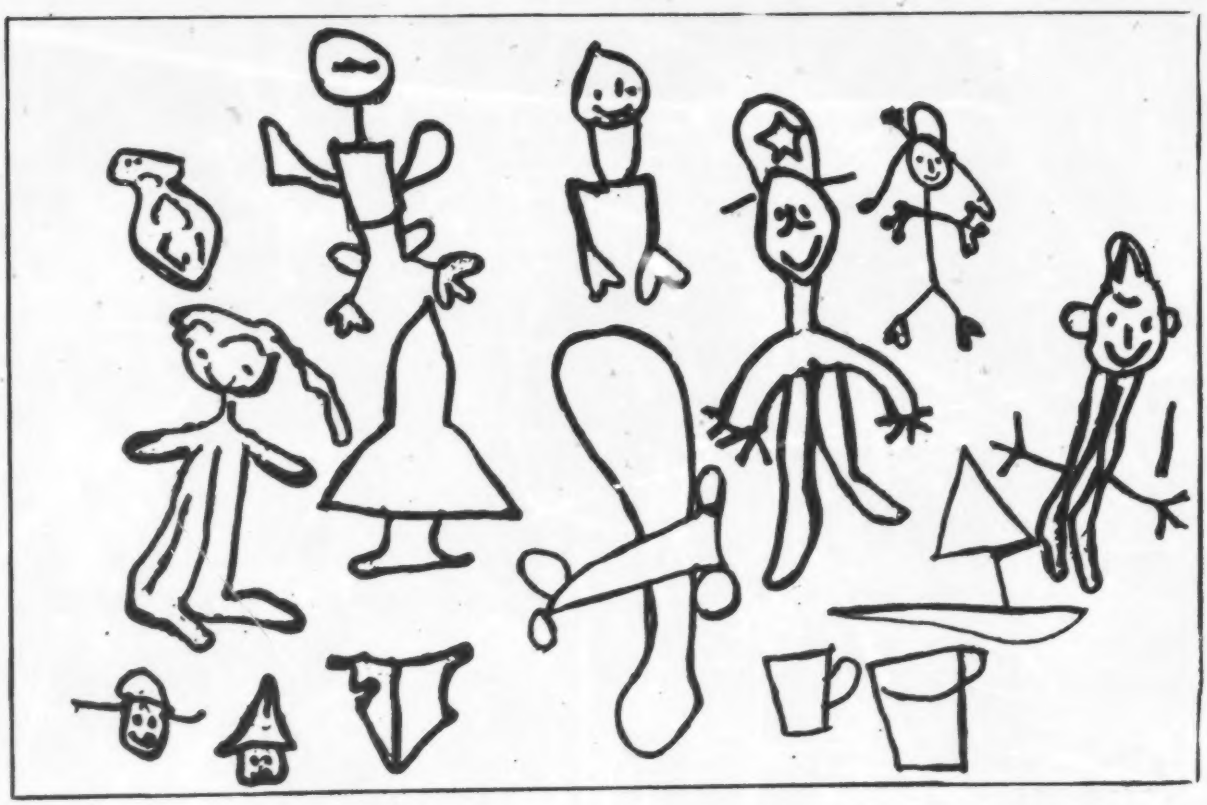
Analysis: 160 words
16 T-units
Average length of T-unit: 10.0 words

Experimental Group 3

#19 (That's how you really make a what-cha-ma-call-it. That's a robot. That's how you really make a robot. A robot like the one at the art gallery--that one don't write too good--[indicating magic marker.] [Subject drew fingers on "robot." Counted number of fingers aloud as he drew.].)

Story elicited: I see people at the art gallery / I saw a robot at the art gallery / That's a robot right there / [indicating drawing] . (I better make another robot--a better _____.) There's a robot I saw and this one and this one / [indicating drawing]. That's Junie's boy / he went--and June's boy and Sharon's boy / and that's a man I saw / and a boat I saw / and that's all I saw / wait a minute / that's a cup [indicating drawing]. / One of those big German cups / Oh--I saw some other things like the cup too / a coffee cup right there / [indicating drawing]. (I'm gonna make me some juice [in the cup].) (Oh--there's some orange--some juice. Here--shaped like a triangle--like this--a triangle is shaped like this. Like a hat. Orange juice is _____ and a hat is--a circle is--one-half of a circle is like a cowboy hat [indicating drawing].) One of the woman's face like this was a _____ _____ / and she had two eyes that _____ / and that's about the whole story about the art gallery trip I went to.

Analysis: 117 words
17 T-units
Average length of T-unit: 6.8 words



APPENDIX E

PICTORIAL DECORATED BY SUBJECT
IN CONTROL GROUP 2

BIBLIOGRAPHY

Almy, M., Chittenden, E., & Miller, P. Young Children's Thinking: Studies of Some Aspects of Piaget's Theory. New York: Teacher's College Press, 1966.

Arnheim, R. Visual Thinking. Berkeley: University of California Press, 1971.

Arnheim, R. Art and Visual Perception: A Psychology of the Creative Eye. Berkeley: University of California Press, 1974.

Barr, A. J., Goodnight, J. H., Sall, J. P., & Helwig, J. J. Statistical Analysis System: Users Guide to Statistical Analysis. Raleigh, N. C.: Sparks Press, 1976.

Brittain, W. L. Creativity, Art, and the Young Child. New York: MacMillan Publishing Co., 1979.

Cohen, J. Statistical Power Analysis for the Behavioral Sciences. New York: Academic Press, 1969.

Clay, M. Exploring With a Pencil. Theory Into Practice, 1979 XIV (5), 334-41.

Dale, P. S. Talking and Reading. In M. P. Douglas (Ed.) 40th Yearbook of the Claremont Reading Conference. Claremont, California: Claremont Graduate School, 1976.

Durkin, D. Children Who Read Early. New York: Teacher's College Press, 1966.

Emig, J. Commentary: Learning to Write. Language Arts, October 1977, 54 (7), 739-740.

Gibson, E., & Levin, H. The Psychology of Reading. Cambridge: MIT Press, 1975.

Gibson, J. J., & Yonas, P. A. A New Theory of Scribbling and Drawing in Children. In The Analysis of Reading Skill. Final report, Project No. 5-1213, Cornell University and the United States Office of Education, December 1968, 355-370.

Graves, D. H. Research Procedures for the Writing Processes of Young Children. Paper presented at the American Education Research Association's Annual Meeting, New York, April 5, 1977.

Henderson, L. "We Like Making Pictures," Research Monograph #16, University of Florida, February 1976.

Kellogg, R. Analyzing Children's Art. Palo Alto, California: Mayfield, 1969.

Kilman, B. Play as a Precursor to Reading. In M. P. Douglas (Ed.) 41st Yearbook of the Claremont Reading Conference. Claremont, California: Claremont Graduate School, 1977.

Levin, J. R., & Allen, V. L. (Eds.) Cognitive Learning in Children. New York: Academic Press, 1976.

Love, J. M. The Productive Language Assessment Tasks: Research Report. The Bulletin of the High/Scope Foundation. Ypsilanti, Michigan, Winter 1976.

Pflaum-Conner, S. The Development of Language and Reading in Young Children. Columbus: Merrill, 1974.

Piaget, J., & Inhelder, B. The Psychology of the Child. New York: Basic Books, 1969.

Platt, P. Grapho-linguistics: Children's Drawings in Relation to Reading and Writing Skills. The Reading Teacher. December 1977, 31 (3), 262-268.

Read, H. Icon and Idea. Cambridge, Mass.: Harvard University Press, 1943.

Sinclair-de-Swartz, H. Development of Psycholinguistics. In D. Elkind, & J. Flanell (Eds.), Studies in Cognitive Development: Essays in Honor of Jean Piaget. New York: Oxford University Press, 1969.

Zepeda-de-Kane, F. The Stimulus Effect of Graphic Representation on the Oral Composition of Kindergarten Children as Related to Sex, Race and Socioeconomic Status. Doctoral Dissertation, University of Florida, 1978.